

Beechcraft SERVICE LETTER

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IMPROVED NOSE GEAR RETRACT ROD PLUNGER

An improved nose gear retract rod plunger, using a pin with a controlled minimum and maximum shear strength has been installed in the forward nose gear retract rod on Bonanzas Serials D-4547 and after. The new retract rod has a longer plunger in its spring-loaded slip joint; if the spring retainer pin should fail on retraction the longer plunger will not pull out of the forward retract rod and will provide an emergency nose gear extension feature so a safe landing may be made. The gear, however, cannot be retracted if the pin fails.

CAUTION

The new pin, part 45-824014, should be substituted only for the previously installed clevis pin when the longer plunger, 35-825094-4, has been installed.

The 45-824014 pin is subject to shear loads and should be inspected at each 100-hour inspection. Inspection of the pin should include thorough cleaning and careful visual inspection for deformation, cracks or other evidence of fatigue.

The following procedure may be used to make these modifications. It is divided into two parts: part A applies to the installation of the new nose gear retract rod plunger, while part B covers the revised rigging procedure and tensions. The new 35-825094-4 plungers, 45-824014 shear pins and 35-825192 decal may be obtained from your Beechcraft distributor and dealer, by ordering Kit 35-619.

THE OPERATION, CARE AND MAINTENANCE OF AN AIRPLANE IS THE OWNERS RESPONSIBILITY. AS CONDITIONS WARRANT, BEECH AIRCRAFT CORPORATION ISSUES SERVICE BULLETINS AND SERVICE LETTERS RECOMMENDING MODIFICATIONS AND OPERATIONAL PROCEDURES TO ENABLE THE OWNER TO GET THE MAXIMUM UTILITY AND SAFETY FROM HIS AIRPLANE.

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Beech Aircraft Corporation - Wichita, Kansas 67201 USA - Founded in 1932 by Walter H. Beech

Improved Nose Gear Retract Rod Plunger

PART A

1. Place the airplane on a jack; it should remain on the jack until part B has been completed.
2. In the nose wheel well, disconnect the nose gear doors and remove the boot from the nose gear retract rod where it passes through the aft bulkhead.
3. With the gear full down, remove the clevis pin in the retract rod slip joint.
4. Retract the gear enough to relieve tension on the slip joint spring, then remove the bolt from the forward end of the forward retract rod and slip the rod end from the fork.
5. With the gear down once more, note the size and position of the spacers and washers in the idler arm fork, then remove the connecting bolt from the idler arm and the two retract rods and remove the forward retract rod.
6. Pull the forward retract rod plunger out and discard it.
7. Insert the new 35-825094-4 plunger in the retract rod. (The new plunger is 7-1/2 inches longer than the original plunger.)
8. Assemble the forward retract rod and aft retract rod in the idler arm fork, placing the washers and spacers in the same positions they previously occupied and install the bolt in the idler arm with the head outboard. Install the key and nut.
9. Partially-retract the gear (approximately halfway) and connect the forward end of the forward retract rod to the nose gear V-brace, installing the clevis bolt with the head outboard.
10. Fully-extend the gear to compress the slip joint, then install the new 45-824014 shear pin in place of the clevis pin in the slip joint. The pin should be installed with the head up, the washer and cotter pin down.

PART B

1. Continue with the airplane on the jack.
2. Using spring scales, and with the gears in full down position, check the down tension on the nose gear drag leg, using the procedure outlined in the Bonanza Maintenance Manual. Tension on the drag leg should be between 45 and 65 pounds.
3. Retract the gear electrically. (Use an auxiliary unit when available.)
4. Check tension in the up position as follows:

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- a. Pull the nose gear off the stop just enough to insert a .005 feeler gage between the rubber bumper and the nose strut and then release the gear.
- b. With a spring scale attached to the nose wheel axle check the up tension. A force of 30 to 45 pounds should be required to release the grip on the feeler gage.
- c. Make necessary adjustments to obtain proper up and down tension by lengthening or shortening the aft retract rods as outlined in the Bonanza Maintenance Manual.

NOTE

If the down tension is below minimum with full retract rod adjustment, replace the spring. Only the heavier springs used on production airplanes starting with D-3751 are available as spares; no washers may be used with these springs to increase tension. When installing a new spring, make sure it is not stacked and recheck the rigging.

5. Connect the nose gear doors alternately and check for proper rigging as follows:
 - a. With gear in down position connect actuator rod to the right door.
 - b. Retract gear.
 - c. Following procedure outlined in Paragraph 4(a), check up tension of the gear. With the right door connected, up tension on the gear should be 18 to 25 pounds. Adjust door actuator rod to obtain proper tension on nose gear.

NOTE

After making necessary door actuator adjustments, check to see if the door actuator mechanism will free fall and lock over center. If the door mechanism will not readily fall and lock, check for door hinges striking keel cut-outs. Clearance can be given door hinges by increasing depth of keel cutout not to exceed $1/16$ inch. Paint the filed section of the keel to prevent corrosion.

- d. Extend gear and disconnect actuator rod from right door.
- e. Connect actuator rod to left door and repeat operation outlined in step c above.

NOTE

As the axle on the right side of the wheel is not open, attach a wire loop to the axle, to make this check. The spring scale may be attached to this loop.

- f. Extend gear and again connect right door.